

# BGF100

Microphone Filter and ESD Protection

Small Signal Discretes



Never stop thinking

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**BGF100**

**Revision History: 2006-10-17, V2.1**

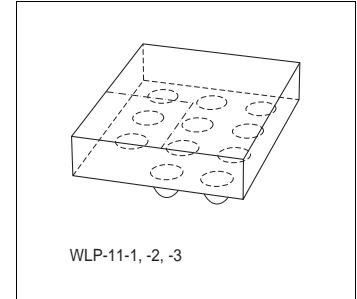
**Previous Version: 2006-01-30**

<b>Page</b>	<b>Subjects (major changes since last revision)</b>
All	Layout conformation

## Microphone Filter and ESD Protection

### Features

- Differential Microphone filter
- Integrated ESD protection up to 15 kV
- Low input impedance
- More than 30 dB stopband attenuation
- Ideal for GSM/UMTS
- Wafer Level Package with SnAgCu solder balls



### Description

The BGF100 is a microphone filter with low pass characteristic offering a very high stop band attenuation up to 6 GHz. It also provides an ESD protection at the input pins up to 15 kV contact discharge. The wafer level package is a green leadfree package with a size of only 1.6 mm × 2.1 mm and a total height of 0.65 mm.

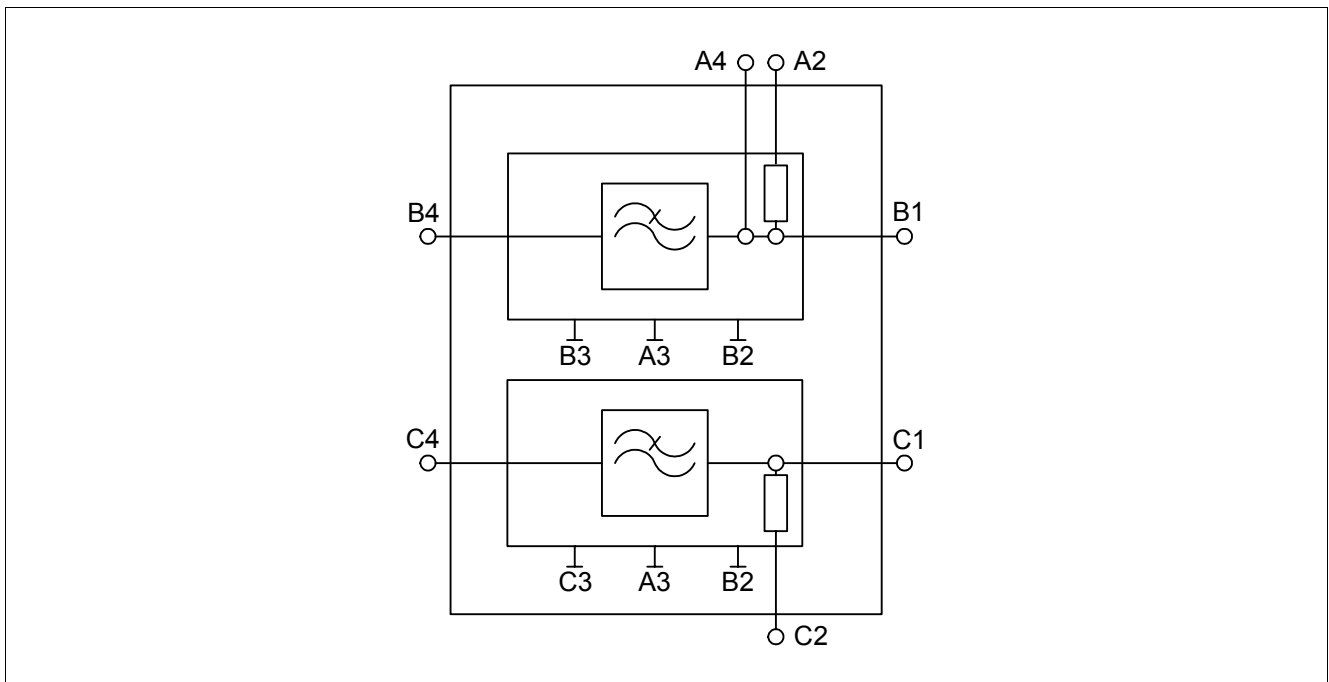


Figure 1 Blockdiagram

Type	Package	Marking	Chip
BGF100	WLP-11-2	BGF100	N0700

Table 1 Maximum Ratings

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Voltage at pin A2 to GND	$V_{A2}$	0		4	V	
Voltage at all other pins to GND	$V_P$	-14		14	V	
Operating temperature range	$T_{OP}$	-40		+85	°C	

**Table 1 Maximum Ratings (cont'd)**

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Storage temperature range	$T_{STG}$	-65		+150	°C	
Input power at all pins	$P_{IN}$			1	mW	
<b>Electrostatic Discharge According to IEC61000-4-2</b>						
Contact discharge at pins B4 to B3, C4 to C3	$V_E$	-15		15	kV	
Contact discharge between all other pins	$V_I$	-2		2	kV	

**Table 2 Electrical Characteristics<sup>1)</sup>**

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Resistors $R_1, R_2$	$R_{1,2}$	45	50	55	$\Omega$	
Resistors $R_3, R_4$	$R_{3,4}$	950	1000	1050	$\Omega$	
Resistors $R_5, R_6$	$R_{5,6}$	1980	2200	2420	$\Omega$	
Resistor Matching $R_3, R_4$	$R_M$	-1		+1	%	
Capacitances $C_1$ to $C_6$	$C$	800	1000	1350	pF	
Substrate leakage currents, Pin B4 to A3 or C4 to A3	$I$			100	nA	$V = 3 \text{ V}$
Insertion loss <sup>2)</sup> Pins B4 to B1 or C4 to C1	$IL$	30			dB	$f = 0.1 \dots 6 \text{ GHz}$ , $Z_S = Z_L = 50 \Omega$

 1) at  $T_A = 25 \text{ °C}$ 

 2) Insertion loss (see also [Figure 3](#)) strongly depends upon source and load impedance. For RF test purposes a  $50 \Omega$  environment is used.

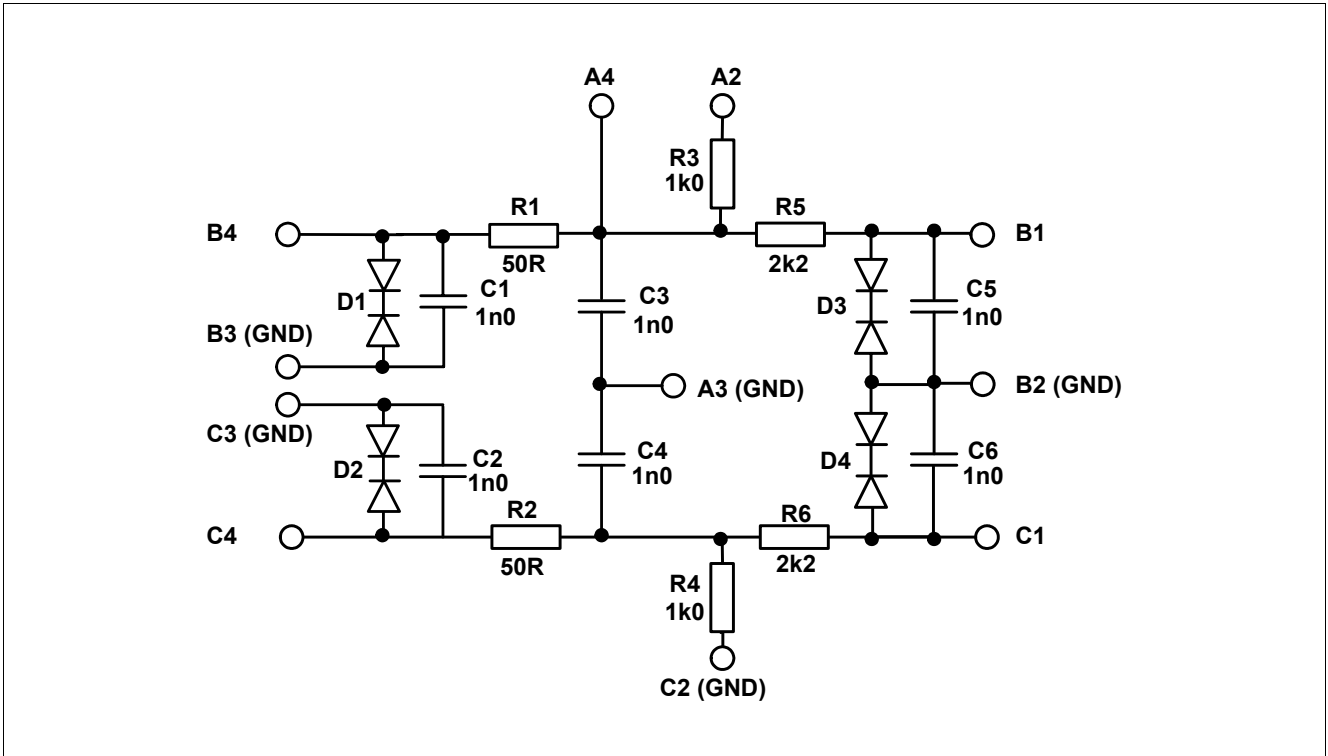


Figure 2 Schematic

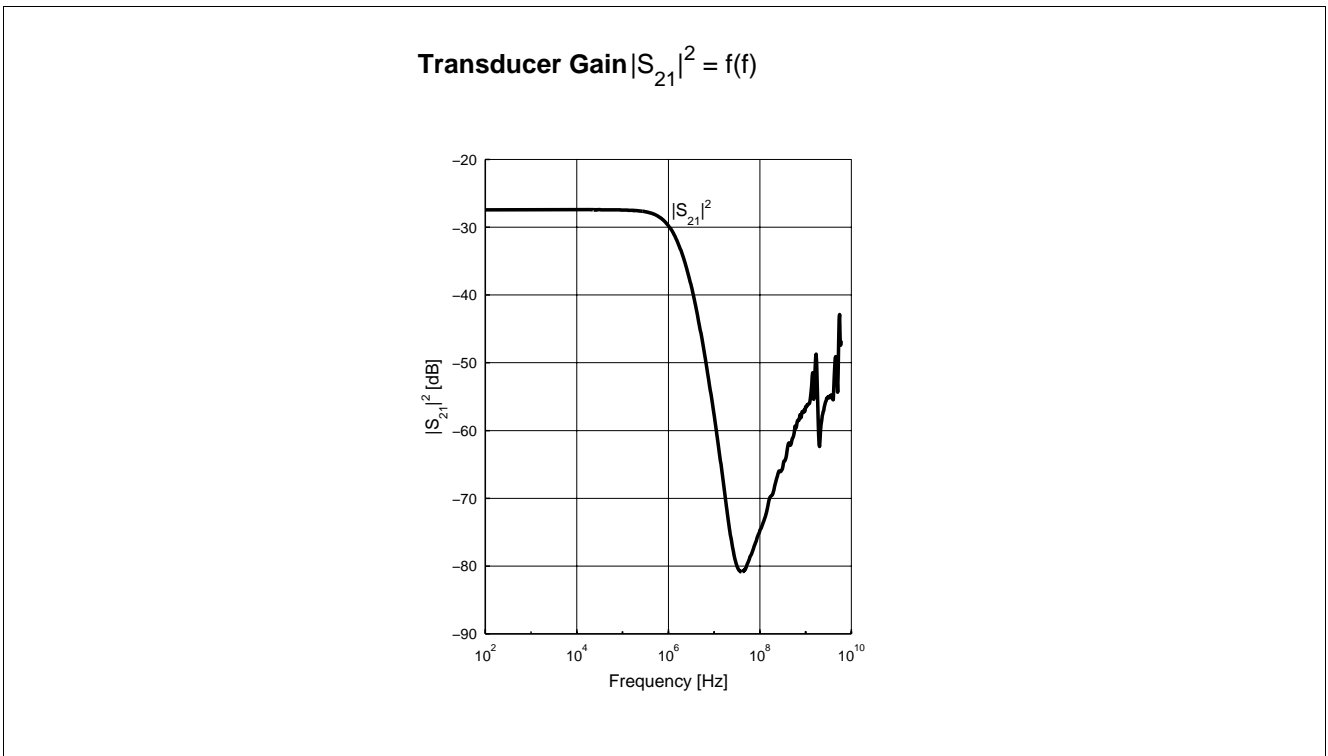


Figure 3 Insertion Loss ( $Z_S = Z_L = 50 \Omega$ )

Package Outlines

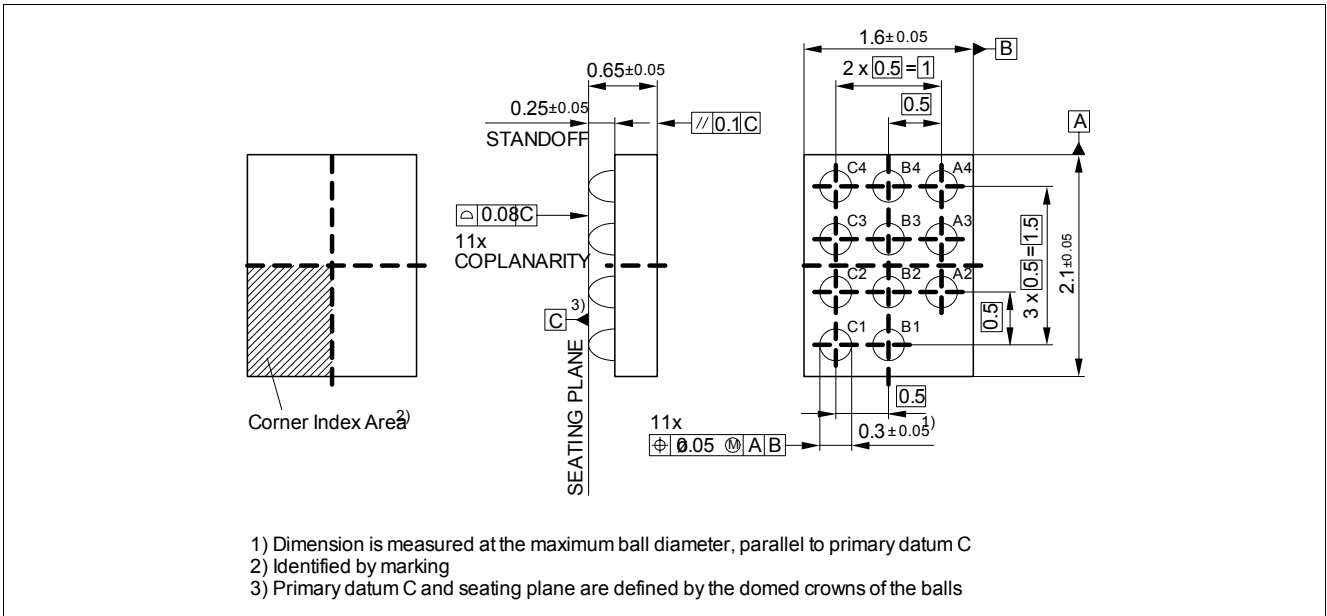


Figure 4 WLP-11-2

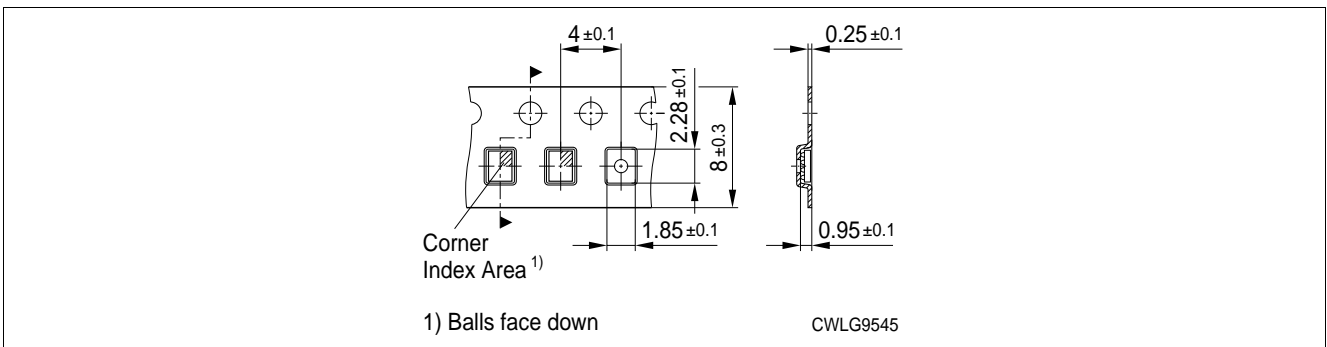


Figure 5 Tape for WLP-11-2

Dimensions in mm

You can find all of our packages, sorts of packing and others in our Infineon Internet Page "Products": <http://www.infineon.com/products>.